

Your Ref: 559631  
Our Ref: CPCH0162203  
Appl No: 01132543.7

## Text of the First Office Action

The present invention relates to an aromatic liquid-crystalline polyester solution composition, and to its use for producing a liquid-crystalline polyester film and a multilayer print circuit board. After examination, comments are made specifically as follows.

1. Claim 1 claims an aromatic liquid-crystalline polyester solution composition. Reference document 1 (EP0672721A2) discloses a liquid crystal polyester resin composition, which comprises a liquid crystal polyester resin component. Reference document 1 specifically discloses a technical solution in which 0.1g of liquid crystal polyester resin is dissolved in 10cc of 2,3,5,6-tetrachlorophenol to form a solution (see reference document 1, the abstract and page 9, lines 19-21 of the description). Compared with reference document 1, the technical solution of claim 1 has the difference that the solvent thereof is 4-chlorophenol, while the solvent in reference document 1 is 2,3,5,6-tetrachlorophenol. These two solvents are of the same category, and the chemical structures thereof are similar, except that the substitution positions of chlorine are different. In addition, the chemical properties of the two solvents are quite similar. They can both be used as solvents of aromatic liquid crystal polyester, and their properties using as solvents have no significant difference. For example, the aromatic liquid crystal polyester disclosed in reference document 2 (US5006631A) has 4-chlorophenol as its solvent (see the abstract of reference document 2). Therefore, on the basis of reference document 1, persons skilled in the art can, without involvement of creative effort, form a composition from a liquid-crystalline polyester solution using 4-chlorophenol disclosed in reference document 2 as the solvent. In addition, no matter what is used as the solvent, the 4-chlorophenol or the 2,3,5,6-tetrachlorophenol disclosed in reference document 1, the solubility of the aromatic liquid-crystalline polyester has no significant change. That is, the

technical solution of claim 1 produces no unexpected technical effect as compared to the prior art. As a result, claim 1 neither has prominent substantive features nor represents notable progress, and it hence does not comply with the provision on inventiveness as stipulated under Article 22-Paragraph 3 of the Patent Law.

2. Claim 2 defines the structural units of the aromatic liquid-crystalline polyester. The examples of reference document 1 have disclosed the structural units as defined in claim 2 and the content of each structural unit (see reference document 1, page 13, line 30 to page 4, line 22 of the description). That is, the additional technical features of claim 2 have been disclosed in reference document 1. When claim 1 is not inventive, claim 2 neither has prominent substantive features nor represents notable progress, and it accordingly does not comply with the provision on inventiveness as stipulated under Article 22-Paragraph 3 of the Patent Law.
3. Claims 4 and 5 claim an aromatic liquid-crystalline polyester film obtained by casting a composition of claim 1 and a process for producing it, respectively. The casting process for producing an aromatic liquid-crystalline polyester film is an existing technique (it is disclosed in JP62-64832A and JP8-281817A, which are mentioned by the applicant in the Background Art of the description of the present application). When the composition of claim 1 is not inventive, casting it to produce a film is easily thought of, and no inventive effort needs to be involved. At the same time, such technical solution produces no unexpected technical effect. As a result, claims 4 and 5 neither have prominent substantive features nor represent a notable progress, and they do not comply with the provision on inventiveness as stipulated under Article 22-Paragraph 3 of the Patent Law.
4. Claims 6 and 7 further restrict the composition of claim 1. Reference document 1 discloses that the aromatic liquid crystal polyester solution composition may comprise an inorganic filler such as silicon dioxide (see reference document 1, the description, page 11, lines 14-17). Although the ranges of the

content of the inorganic filler and the particle size of the silicon dioxide are not disclosed in reference document 1, the ranges defined in claims 6 and 7 fail to make the present invention exhibit unexpected technical effect, as the ranges provided are only conventional ones. Such being the case, claims 6 and 7 neither have prominent substantive features nor represent notable progress when claim 1 is not inventive. Said claims, thus, do not comply with the provision on inventiveness as stipulated under Article 22-Paragraph 3 of the Patent Law.

5. Claims 8 and 9 claim a multilayer print circuit board comprising an aromatic liquid-crystalline polyester solution composition according to claim 6 and a process for producing it. The process for producing the print circuit board as defined in claims 8 and 9 is a conventional one. Therefore, when the composition of claim 6 is not inventive, the technical solutions of claims 8 and 9 can be obtained, without involvement of creative effort, by applying the composition to the production of a multilayer circuit. Consequently, claims 8 and 9 neither have prominent substantive features nor represent notable progress, and they thus do not comply with the provision on inventiveness as stipulated under Article 22-Paragraph 3 of the Patent Law.
6. Claim 1 defines one of the components of the composition with the generic concept "aromatic liquid-crystalline polyester". The only composition implemented by the applicant is formed by an "aromatic liquid-crystalline polyester" having a restricted chemical structure. Therefore, according to the disclosure of the application documents, persons skilled in the art cannot foresee that any composition formed by "aromatic liquid-crystalline polyester" and 4-chlorophenol can be used to solve the technical problem underlying the present invention. That is, "aromatic liquid-crystalline polyester" covers an overly wide scope of protection. As a result, claim 1 is not based on the description, and it fails to comply with Article 26-Paragraph 4 of the Patent Law. The applicant should restrict the structural unit of the said "aromatic liquid-crystalline polyester" in accordance with the additional technical features of claim 2.

7. In the additional technical features of claim 6, the content range of the inorganic filler being "1 to 100 parts by weight" is not disclosed in the Technical Solution part of the description. Thus, claim 6 is not based on the description, and it is not formally supported by the description. Said claim, hence, does not comply with Article 26-Paragraph 4 of the Patent Law.
8. The claims are not concise as a whole and do not comply with Rule 20-Paragraph 1 of the Implementing Regulations of the Patent law, since claim 12 repetitively restricts the additional technical features of claim 10.
9. Claims 6, 7 and 10-12 are dependent claims of claim 1. Therefore, they should be placed after claim 1 and before the other independent claim(s), so as to comply with Rule 23-Paragraph 2 of the Implementing Regulations of the Patent Law.

For the above reasons, no patent right may be granted to this application as the current documents thereof fail to comply with Article 22-Paragraph 3 and Article 26-Paragraph 4 of the patent Law, and Rules 20 and 23 of the Implementing Regulations of the Patent Law. This application will be rejected, therefore, if the applicant fails to present convincing reasons against the above comments within the specified time limit and to submit a new set of application documents in which the above defects are removed. The applicant is to note that amendments to the application documents shall conform to Article 33 of the Patent Law, and may not go beyond the scope of the initial description and claims. In addition, the applicant should submit a photocopy of the original text to which the amendments have been made, and on said photocopy the amendments should be marked out clearly in color.

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## Patent Office of the People's Republic of China

Address: Receiving Section of the Chinese Patent Office, No. 6 Tucheng Road West, Haidian District, Beijing. Postal code: 100088

Applicant	SUMITOMO CHEMICAL COMPANY LIMITED		Seal of Examiner	Date of Issue
Agent	China Patent Agent (H.K.) Ltd.			March 5, 2004
Patent Application No.	01132543.7	Application Date	July 29, 2001	Exam. Dept.
Title of Invention	AROMATIC LIQUID-CRYSTALLINE POLYESTER SOLUTION COMPOSITION			

*First Office Action*

1. ☒ Pursuant to the provision of Article 35 (1) of the Chinese Patent Law, the examiner made an examination as to substance of the captioned patent application for invention upon the request for substantive examination filed by the applicant.

☐ Pursuant to the provision of Article 35 (2) of the Chinese Patent Law, the Chinese Patent Office has decided to conduct on its own initiative an examination as to substance of the captioned patent application for invention.

2. ☒ The applicant requests taking the filing date, Jul 31, 2000, at the JP Patent Office, the filing date, Aug 11, 2000, at the JP Patent Office, the filing date, Mar 27, 2001, at the JP Patent Office, the filing date, Apr. 27, 2001, at the JP Patent Office, as the priority date of the present application.

☒ A copy of the first filed patent application certified by the receiving organ of the initial country of filing has been submitted by the applicant.

☐ A copy of the first filed patent application certified by the receiving organ of the initial country of filing has not been submitted by the applicant. Pursuant to the provision of Article 30 of the Chinese Patent Law, no priority right shall be deemed to have been claimed.

3. ☐ The applicant filed amended application document(s) on \_\_\_\_\_ and \_\_\_\_\_.

☐ Examination has confirmed that \_\_\_\_\_ filed on \_\_\_\_\_ cannot be accepted, \_\_\_\_\_ filed on \_\_\_\_\_ cannot be accepted,

as the above amendment(s) ☐ is/are not in conformity with the provision of Article 33 of the Chinese Patent Law.

☐ is/are not in conformity with the provision of Rule 51 of the Implementing Regulations of the Chinese Patent Law.

☐ For the specific reason that the amendment(s) cannot be accepted, see the text of

the Office Action.

4. ☒ The examination is conducted in the light of the original application document(s)  
☐ The examination is conducted in the light of the following application document(s):  
 in the original application documents submitted on the filing date:  
 Claim(s) \_\_\_\_\_, page(s) \_\_\_\_\_ of the description, Figure(s) \_\_\_\_\_  
 of the drawing(s); Claim(s) \_\_\_\_\_, page(s) \_\_\_\_\_ of the description,  
 Figure(s) \_\_\_\_\_ submitted on \_\_\_\_\_; Claim(s) \_\_\_\_\_, page(s) \_\_\_\_\_  
 of the description, Figure(s) \_\_\_\_\_ submitted on \_\_\_\_\_  
☐ Abstract of the description submitted on \_\_\_\_\_.
5. ☐ The present Office Action has been prepared without a search having been conducted.  
☒ The present Office Action has been prepared with a search having been conducted.  
☒ The following reference document(s) is/are cited in this Office Action (its/their serial number(s) will, continue to be used throughout the examination procedure):

No.	Number or Title of Document	Date of Publication (or filing date of interference application)
1	EP0672721A2	Sep 20, 1995
2	US5006631A	Apr 9, 1991
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6. The concluding comments of the examiner are:

- ☐ On the description:  
☐ The content of the application comes within the scope where no patent right is granted as provided in Article 5 of the Patent Law.  
☐ The description is not in conformity with the provision of Article 26(3) of the Patent Law.  
☐ The drafting of the description is not in conformity with the provision of Rule 18 of the Implementing Regulations.
- ☒ On the claims:  
☐ Claim comes within the scope where no patent right is granted as provided in Article 25 of the Patent Law.  
☐ Claim is not in conformity with the definition of invention in Rule 2(1) of the Implementing Regulations.  
☒ Claims 1-2, 4-9 do not possess novelty as provided in Article 22(2) of the Patent Law.  
☐ Claim \_\_\_\_\_ does not possess inventiveness as provided in Article 22(3) of the Patent Law.  
☐ Claim \_\_\_\_\_ does not possess practical applicability as provided in Article 22(4) of the Patent Law.

- ☒ Claims 1, 6 are not in conformity with the provision of Article 26(4) of the Patent Law.
- ☐ Claim \_\_\_\_\_ is not in conformity with the provision of Article 31(1) of the Patent Law.
- ☒ Claims 6-7, 10-12 are not in conformity with the provisions of Rules 20-23 of the Implementing Regulations.
- ☐ Claim \_\_\_\_\_ is not in conformity with the provision of Article 9 of the Patent Law.
- ☐ Claim \_\_\_\_\_ is not in conformity of the provision of Rule 12(1) of the Implementing Regulations.

For specific analyses of the above concluding comments, see the text of this Office Action.

7. In view of the above concluding comments, the examiner holds that:

- ☐ The applicant should amend the application document in accordance with the requirements raised in the text of this Office Action. The amended document(s) should be submitted in duplicate and should conform to the provisions of Article 33 of the Patent Law and Rule 51 of the Implementing Regulations of the Chinese Patent Law.
- ☒ The applicant should expound in his Observations the reasons why the captioned patent application is patentable and amend the places not conforming to regulations as pointed out in the text of the Office Action, otherwise it would be impossible for the patent right to be granted.
- ☐ The captioned patent application contains no substantive content for which the patent right may be granted, thus if the applicant has not advanced his reasons or has not done so adequately, the application will be rejected.

8. The applicant should pay attention to the following matters:

- (1) In accordance with the provision of Article 37 of the Patent Law, the applicant should submit his/its Observations within four months from the date of receipt of this Office Action; if, without any justified reason, the time limit for making response is not met, the application will be deemed to have been withdrawn.
- (2) The amendments made by the applicant to his application should conform to the provision of Article 33 of the Patent Law, the amended text should be in duplicate and the format should conform to the relevant provisions of the Guidelines for Examination.
- (3) The applicant's Observations or amended text should be mailed or presented to the Receiving Section of the Chinese Patent Office. Document no mailed or presented to the Acceptance Section have no legal force.
- (4) Without making an appointment, the applicant and/or agent may not come to the Chinese Patent Office to hold an interview with the examiner.

9. This Office Action consists of the text portion totaling 4 page(s) and of the following annex(es):

☒ 2 duplicate copies of the reference document(s) cited totaling 36 page(s).

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